OLD STANDARDS.

BY a curious accident it has just been discovered that the standard yard and certain other measures and weights which were supposed to have been lost when the Houses of Parliament were destroyed by fire in 1834 are still in existence. The following account of the matter is condensed from a statement in the *Times*. A reference to the contemporary records shows that after the fire the standard bars of 1758 and 1760 were both found among the ruins, "but they were too much injured to indicate the measure of a yard which had been marked upon them." The principal injury to both of the standards was the loss of the left-hand gold stud, but whether this was caused by the action of the flames or otherwise is not known. When the Palace of Westminster was rebuilt the two bars were deposited in the Journal Office, and from that time, until the other day, they seem to have been wholly lost sight of. About a fortnight ago it happened to be stated in the lobby that one of the duties of the Speaker was to inspect once in every twenty years the standards immured in the sill of the Lower Waiting Hall. Inquiries at the Standards Department of the Board of Trade elicited the fact that, so far from any statutory requirement being imposed upon the Speaker in the direction indicated, Section 35 of the Weights and Measures Act, 1878, which provides for the care and restoration of the Parliamentary copies of the Imperial standards, specially exempts the walled-up copy from periodical inspection and comparison. It was found, however, that in 1871 Speaker Denison took cognizance of the standards; and this fact was brought to the Speaker's notice. While inquiries were being made as to Speaker Denison's inspection, an official in the Journal Office mentioned that when the contents of that office were recently being transferred to the new wing he had observed among the lumber some old weights and measures. These proved to be the missing standards. On Tuesday last they were examined by Mr. Chaney, the Superintendent of Weights and Measures; and on Wednesday the Speaker was to visit the Journal Office for the purpose of inspecting them.

The most important of the standards thus rescued from oblivion are the yard measures constructed by Bird in 1758 and 1760. The former was copied from a bar in the possession of the Royal Society, which was itself a copy of a standard preserved in the Tower; and the second was constructed under the directions of a Committee of the House of Commons from the 1758 standard. "Each of these two standard yards consisted of a solid brass bar 1·05 in. square in section and 39·73 in. long. Near each end of the upper surface gold pins or studs 0·1 in. in diameter were inserted, and points or dots were marked upon the gold to determine the length of the yard." The other standards in the custody of the Journal Office are two brass rods answering the description of the old Exchequer yard, and four weights supposed to be certain of the "copies, model, patterns, and multiples" ordered by the House on May 21, 1760, "to be locked up by the clerk and kept by him." The most important weight—the standard troy pound—is not amongst those now brought to light.

NOTES.

AT some little distance to the north and north-east of Cardiff lies a beautiful piece of hilly country, much frequented by pedestrians, and known as the Black Mountain or Black Forest district. It has not been found practicable by the Local Committee to arrange an official excursion to this district on the occasion of the visit of the British Association to Cardiff; but a project is now being unofficially forwarded for conducting small parties of not exceeding six visitors each to some of the choicest parts of this country, at a time so arranged as not to interfere with the sittings of the various Sections. Several local gentlemen, thoroughly familiar with the district, have offered to act as guides, and with fair weather most enjoyable excursions are to be anticipated. The country being essentially one for pedestrians, the excursions would take the form of an afternoon walk of from eight to twelve miles, with a further walk on the following day of from twenty-five to thirty miles. Any member of the British Association desirous of taking part in one of these excursions can obtain full particulars by applying to the Local Secretaries, 9 Bank Buildings, Cardiff, who will forward the applications to the promoters.

THE annual meeting of the French Association for the Advancement of the Sciences will be held at Marseilles, commencing on September 17. The special subject chosen for discussion in the Botanical Section is the best mode of arrangement and exhibition for different kinds of botanical collections, with the double purpose of the preservation of the specimens and the facilitating of study.

THE Technical and Recreative Institute established by the Goldsmiths' Company at New Cross was opened by the Prince of Wales on Wednesday. In addition to this Institute there are to be two Polytechnics south of the Thames, one in Battersea Park Road, the other in the Borough Road. The memorial stone of the one in Battersea was laid by the Prince of Wales on Monday.

PROF. M. W. HARRINGTON, the founder of the *American Meteorological Journal*, has been appointed Chief of the United States Weather Bureau, under the Department of Agriculture in Washington. Prof. Harrington was born in Illinois in 1848, and graduated at Michigan in 1868. In 1879 he was made Professor of Astronomy and Director of the Astronomical Observatory at Ann Arbor, Michigan. From a recent article by him, entitled "How could the Weather Service best promote Agriculture?" it appears likely that the energies of the new service will be devoted more to the interests of agriculture than to commerce, and that an attempt will be made to issue special weather predictions for the farmer, by means of the multiplication of local forecasting stations. There can be little doubt—seeing the large amount of funds under his control—that he will also still further advance the important work of international meteorology which has been so ably conducted by his predecessors.

THE half-yearly general meeting of the Scottish Meteorological Society was held in Edinburgh on Wednesday. The report from the Council of the Society was presented; and papers were read on certain relations of wind, pressure, and temperature at the Ben Nevis Observatories, by Dr. Buchan, and on influenza and weather of London in 1891, by Sir Arthur Mitchell and Dr. Buchan.

FROM the official record of the work done in the British Museum during 1890 it seems that there has been a serious decrease in the number of visitors. Special departments, however, have been used more than ever by students; and it is satisfactory to find that the zoological and geological collections in the Natural History Museum are being more generally appreciated.

GERMAN scientific papers record the death, on June 18, of Dr. Otto Tischler, well known as an archæologist of wide learning and sound judgment. He especially distinguished himself by his investigation of the burial-mounds of East Prussia. Dr. Tischler was forty-eight years of age.

PROF. A. RICCÒ, Director of the Catania Observatory, who has just returned from a visit to the volcano Stromboli, sends us the following notice of a recent eruption:—"On June 24, 45 minutes after noon (Rome mean time), the inhabitants of the Æolian Isles were alarmed by two strong shocks of earthquake, followed by two tremendous explosions of the volcano, which sent forth from four mouths a great quantity of smoke, cinders, incandescent blocks, and currents of lava that descended the mountain slopes to the sea. The sea, at the points where the lava entered it, steamed up, producing great noisy masses of vapour. The phenomena continued till July 1. Stromboli has now returned to its habitual state of moderate activity."

THE annual meeting of the Society for the Preservation of the Monuments of Ancient Egypt was held last week in the rooms of the Society of Antiquaries at Burlington House. Lord Wharncliffe, President, occupied the chair. The report stated that there was little to report of success attending the proceedings of the Society for the past year. Its energies had been directed principally to two points—the necessity for an official inspector or superintendent in Egypt, whose duty should be the care of the ancient monuments, and an endeavour to do something towards arresting the gradual destruction of the Great Temple at Karnak. Reports concerning a proposed scheme for barring the Nile below Philæ, to make a vast reservoir for purposes of irrigation, had appeared in the public papers from time to time, and recently various more definite communications had been received by the committee on the same subject. The result would be, it was acknowledged, to completely cover this beautiful island and temple with water. There had been some correspondence on this subject with the authorities in Egypt; but as nothing had as yet been decided as to any scheme of irrigation, and as a committee would be appointed to consider the whole question, it might be considered as suspended for the present, and the committee had thought it best to wait before taking any further action; but they would not lose sight of this important matter, and would oppose to the utmost of their power any engineering scheme which would involve injury or destruction to this world-renowned spot. General Donnelly moved the adoption of the report; and the motion was seconded by Sir Edmund Henderson, and agreed to. The committee for the coming year was then elected, and a discussion subsequently took place as to the proposed scheme for barring the Nile below Philæ, the opinion of the meeting being evidently strongly opposed to the adoption of any system of irrigation which should involve damage to the temple. Mr. J. Bryce, M.P., spoke of the wanton injury which was often inflicted on monuments in Egypt, and said that he thought it would be necessary, in dealing with that matter, to bring the question of jurisdiction to the attention of those from whom any system of inspection or care was to emanate. We may note that in answer to a question put by Mr. Bryce in the House of Commons on July 15, Sir J. Fergusson said that nothing definite had been settled as to the preservation of ancient monuments in Egypt; £E10,000 had been allotted in the Budget for the current year.

THE Pilot Chart of the North Atlantic Ocean for July contains a special account of a hurricane that moved along a track almost due north, about 500 miles east of Newfoundland on June 9 and 10, together with a chart of the conditions of barometer and wind between Newfoundland and Ireland, showing that the abnormal track was due to the approach of an anticyclone west of the British Isles. A supplement issued with the Pilot Chart illustrates the drift of every bottle paper returned to the United States Hydrographic Office since April 1889. There are 113 papers that contain the date of commencement and end of journey; the average number of miles that each bottle drifted is 869, and the average daily drift is 5·8 miles. This figure is rather below the true average rate per day, as any time the bottle lay upon the shore before discovery added to its time of drift.

M. PATOUILLARD has just returned from a scientific mission with which he was intrusted by the Minister of Public Instruction in France, an investigation of the mycological flora of Tunis, Carthage, and the adjacent regions.

IN one of the principal articles of the *Meteorologische Zeitschrift* for May, Herr R. Börnstein discusses the question of a connection between air-pressure and the hour angle of the moon, using as a basis the hourly observations of four German and Austrian stations. This investigation differs from the usual mode of treatment, as it takes no account of the moon's phases, or of its declination or distance from the earth, but only of the lunar day, and deals solely with atmospheric pressure. The results arrived at are: (1) that the existence of atmospheric tides is not plainly recognizable in the range of pressure; (2) at three of the stations the pressure exhibits a single oscillation during the lunar day. The maximum occurs at Hamburg and Berlin shortly before the setting of the moon, and at Vienna about the time of the lower culmination, while the minimum occurs at all stations near the time of the moon's rising.

WE have received vol. viii. of the *Anales de la Oficina Meteorologica Argentina.* It contains a summation of the records obtained at five different stations in the Republic during the years 1877–89. The organization of the Department appears to be now very complete, there being no less than twenty-eight stations fully equipped with ordinary and self-registering instruments.

REFERRING to a statement which has been publicly made, that the adoption of electric lighting in place of gas at the office of the Savings Bank Department of the General Post Office has been followed by a marked reduction in the amount of sick leave, the *Lancet* says it has good authority for believing that the statement in question is substantially correct. Although the time which has as yet elapsed—two years—since the introduction of the new illuminant has been insufficient for the collection of trustworthy statistics, our contemporary thinks there is every reason to believe that electric lighting will prove to be much more wholesome than ordinary gas flames. An electric lamp does not compete for the oxygen of the apartment in which it is placed, and this circumstance gives it a marked advantage over any open flame. It cannot, like some forms of gas-burner, be used to promote ventilation; but in ordinary situations its harmlessness is a much more important property.

METEOROLOGICAL observatories are generally ill adapted, by reason of dust and smoke, for observations on atmospheric electricity; and, with the view of inciting private individuals to such work, Herren Elster and Geitel, of Wolfenbüttel, have lately issued a *brochure* in which they indicate the ends to be sought and the instrumental means. Three things demand attention: first, systematic observation and measurement of electricity in the open air at different times in the day and in the seasons, humidity and air-temperature being determined at the same time; second, measurement of the fall of potential with a clear sky; and third, measurement of the fall of potential and its change of sign during rain, &c. The instruments and methods recommended are such as present little difficulty for private persons.

THE American National Geographic Society prints in the current number of its magazine a full and interesting account, by Israel C. Russell, of an expedition to Mount St. Elias, Alaska. The paper is illustrated by various excellent maps and diagrams.

THE Winchester College Natural History Society has just issued, under the title of "Geological Notes" (J. Wells, Winchester), a list of all the fossils as yet known from the chalk in the anticlinal of Winchester. The exact localities and zones are given; and, since the names appear not only to have been carefully determined, but to be well up to date, this very modest pamphlet will prove as useful a guide to the collector as it is valuable to the stratigraphical geologist.

Messrs. Woodall, Minshall, and Co., Oswestry, have issued "A Flora of Oswestry and District," by T. P. Diamond, Honorary Secretary of the Offa Field Club. It contains a list of plants in the neighbourhood of Oswestry, arranged according to their natural orders; and at the end there is an index, in which both the English and the Welsh names of the plants are given. Mr. Diamond calls attention to the fact that his "list of over 700 plants includes representatives of 90 out of the 101 natural orders in the flora of the United Kingdom."

The United States Department of Agriculture is printing—in the series entitled "Contributions from the United States National Herbarium"—what promises to be a valuable manual of the plants of Western Texas, by John M. Coulter. This district is described as "one of the richest regions in plant display, containing a flora particularly interesting on account of the intermingling of Mexican species." The manual is being published in parts because the author hopes that their successive appearance may call forth additional information that may be embodied in a final supplement.

A sheet dealing with the potato disease will shortly be issued by the Royal Agricultural Society of England. It was originally published by the Irish Land Commission, by whose permission it is being reproduced. In the text, by Mr. William Carruthers, F.R.S., all necessary information is given, and this is accompanied by coloured drawings illustrating various phases of the potato disease.

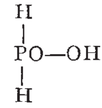
In the July number of the *London and Middlesex Note-Book*, Mr. G. F. Lawrence says he recently obtained a drift implement of unusual form from the site of Mr. Peter Robinson's new premises in Oxford Street. The peculiarity consists of the curious curvature of one face of the implement compared with the flatness of the other side. He does not know of another like it, but suggests that, as attention is called to what may be a mere variation of an ordinary type, examples may be found in other collections. This specimen is of a somewhat ochreous colour, is lustrous and but slightly abraded or rolled, and it measures 5⅜ inches long by 3 inches wide. The occurrence of drift-implements in Central London is rather unusual. Mr. Lawrence thinks twelve would be rather over than under the number known.

In the current number of the Scientific Proceedings of the Royal Dublin Society (vol. vii. Part 2) Mr. E. W. L. Holt publishes a preliminary note on the fish obtained during the cruise of the s.s. *Fingal*, 1890, on the Society's survey of fishing grounds on the west coast of Ireland. Amongst the shore fishes, *Aphia pellucida*, Nardo, and *Crystallogobius nilssonii*, Düb. and Kor., are for the first time recorded from Irish waters. The second British specimen of *Arnoglossus grohmanni*, Bonap., is also recorded. From depths between 100 and 500 fathoms off Achill Head, *Pomatomus telescopium*, Risso, *Mora mediterranea*, Risso, and *Macrurus æqualis*, Gthr., are added to the British fauna; and a description is given of a new deep-sea eel, intermediate between Saurenchelys and Nettastoma, which has been named *Nettophichthys retropinnatus*, n. g. et sp. *Gadus esmarkii*, Nilsson, and *Macrurus rupestris*, Gunner, are added to the Irish fauna from similar depths, and *Argentina sphyræna*, Linn., from 52 to 80 fathoms. Amongst other fish recorded from depths exceeding 100 fathoms are *Chimæra monstrosa*, Linn., *Trigla lyra*, Linn., *Gadus argenteus*, Guich., *Phycis blennioides*, Brünn., *Haloporphyrus eques*, Gthr., *Macrurus cœlorhynchus*, Risso, *M. lævis*, Lowe, &c. A young Phycis is also recorded from 26 fathoms, and mention is made of the occurrence at the surface of a shoal of young *Gadus poutassou*, Risso, 34 miles from land.

Hardness is one of the most important properties of solid bodies; yet the measurement of it has not been very satisfactorily effected hitherto. Prof. Auerbach, of Jena, has recently described (*Repertorium für Physik*) an apparatus for the purpose, designed for transparent bodies. In it the spherical surface of a lens is pressed up by the short arm of a weighted lever against a small thick plate, on which the observer looks down through a microscope furnished with a micrometer, watching the effects of increasing pressure. Glass and rock crystal were observed. The author offers a theory of the subject, and tests it. A comparison of hardnesses with moduli of elasticity shows that, while the more elastic of those substances were also the harder, the hardness increases less than the elasticity.

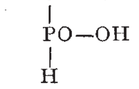
From recent accounts it appears that the consumption of gas in Paris in 1890 exceeded that in 1880 by 26·2 per cent., while the number of consumers increased 56·8 per cent. The amount per consumer diminished 19·5 per cent., from 1642 to 1322 cubic metres. Electricity has evidently withdrawn many large consumers of gas. The same account states that in *three* years the number of arc and glow lamps has increased 140 and 170 per cent. respectively. The consumption of petroleum in France has increased 47 per cent in those ten years, while that of gas, in the whole of France, has grown 62 per cent.

A series of addition compounds of aldehydes with hypophosphorous acid are described by M. Ville in the current number of the *Annales de Chimie et de Physique*. As is well known, aldehydes exhibit the characteristic property of uniting directly with many other substances, such as ammonia, hydrocyanic acid, acid sulphites, and hydroxylamine. Some time ago, it was shown by Fossek that trichloride of phosphorus was likewise capable of uniting directly with many aldehydes with production of liquid compounds decomposable by water. M. Ville now shows that a similar series of additive compounds are formed with hypophosphorous acid, and these compounds are of considerable importance as throwing more light upon the nature of this lower acid of phosphorus. Hypophosphorous acid, H_3PO_2, the acid derived from the as yet unisolated oxide P_2O, may be regarded as possessing the structure



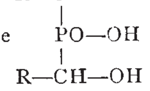
$$\begin{array}{l}\mathrm{H}\\ |\\ \mathrm{PO{-}OH}\\ |\\ \mathrm{H}\end{array}$$

By the direct action of aldehydes under the influence of a slight rise of temperature, two distinct classes of new compounds are obtained. When the aldehyde and hypophosphorous acid are allowed to react in the proportion of equal molecules, compounds of the type



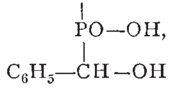
$$\begin{array}{l}\mathrm{R{-}CH{-}OH}\\ \quad\;\; |\\ \quad\;\mathrm{PO{-}OH}\\ \quad\;\; |\\ \quad\;\;\mathrm{H}\end{array}$$

are obtained, where R may represent the radicle of any aldehyde. If, however, two molecular proportions of aldehyde are employed, compounds of the type



$$\begin{array}{l}\mathrm{R{-}CH{-}OH}\\ \quad\;\; |\\ \quad\;\mathrm{PO{-}OH}\\ \quad\;\; |\\ \mathrm{R{-}CH{-}OH}\end{array}$$

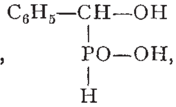
are formed. The aldehydes of the aromatic series lend themselves best to the formation of these compounds, those of the fatty series exhibiting a great tendency to the production of condensation products. The compound of the second type with benzoic aldehyde,



$$\begin{array}{l}\mathrm{C_6H_5{-}CH{-}OH}\\ \qquad\quad |\\ \qquad\;\;\mathrm{PO{-}OH}\\ \qquad\quad |\\ \mathrm{C_6H_5{-}CH{-}OH}\end{array}$$

is obtained by digesting together for several hours upon a water-bath benzaldehyde and hypophosphorous acid in an atmosphere of carbon dioxide. Crystals of the new compound soon commence to separate, and rapidly permeate the whole liquid. On draining and washing, they are found to consist of colourless radiating groups of lamellæ. They are not very soluble in water, but dissolve more readily in organic solvents, best in methyl alcohol. The aqueous solution is strongly acid, decomposing carbonates readily, and forming crystalline salts with bases. Curiously, though, it exerts no reducing action upon solutions of copper sulphate or silver salts.

In order to obtain the acid of the first type,



$$\begin{array}{l} C_6H_5\text{—}CH\text{—}OH \\ \qquad\quad | \\ \qquad\;\; PO\text{—}OH, \\ \qquad\quad | \\ \qquad\quad H \end{array}$$

it is best to employ an excess of hypophosphorous acid. In this case, instead of crystals of the acid of the second type separating, the whole forms a homogeneous liquid which remains unprecipitated by water. It contains the acid of the first type, and this latter is best isolated by precipitating the lead salt by the addition of lead acetate and decomposing the salt, suspended in water, by means of sulphuretted hydrogen. On concentration of the filtered solution, a syrup is obtained which eventually yields deliquescent crystals of the pure acid. The solution of this acid does not reduce copper sulphate, but readily precipitates metallic silver from silver nitrate. Many similar compounds with other aldehydes have also been prepared, and found to present analogous properties more or less modified by the specific nature of the particular aldehyde employed.

THE additions to the Zoological Society's Gardens during the past week include two Ruddy-headed Geese (*Bernicla rubidiceps* ♂ ♂) from the Falkland Islands, presented by Mr. F. E. Blaauw, C.M.Z.S.; a Smooth Snake (*Coronella lævis*), British, presented by Mr. W. H. B. Pain; two great Eagle Owls (*Bubo maximus*), European, deposited; six Eyed Lizards (*Lacerta ocellata*), two Four-lined Snakes (*Coluber quadrilineatus*), a Back-marked Snake (*Rhinechis scalaris*), South European, purchased; a Burrhel Wild Sheep (*Ovis burrhel* ♂), a Japanese Deer (*Cervus sika* ♀), a Bennett's Wallaby (*Halmaturus bennetti* ♀), two Night Herons (*Nycticorax griseus*), bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

A CAUSE OF LUNAR LIBRATION.—A paper by Mr. S. E. Peal, "On a Possible Cause for Lunar Libration other than an Ellipsoidal Figure, and on Lunar Snow Mountains," has recently been published by Messrs. Dulau and Co. It is shown that evidence of several kinds points to the existence of a vast shoal, or submerged continent, some 1500 miles long by 400 across along the prime meridian. This is presumed to be of greater specific gravity than the refrigerated *maria* east and west of it, and to have been at one time situated in the southern hemisphere. The difference of attraction upon the shoal and the surrounding *maria* is shown to be sufficient both to cause and maintain libration. Since libration began, the shoal has placed itself geocentrically, in which case the south pole must have been drawn forward about 30°. The possibilities of the case seem to be as follows. The moon formerly had a physical constitution the same as that of the earth at the present time. The lunar ocean beds were then steadily subsiding, the lines of upheaval and weakness being on the continents, and causing a series of *quasi*-volcanic orifices. Whilst tidal friction was reducing the velocity of rotation, polar snow-caps were formed, and the atmosphere became rarer. The extension of the snow-cap to the equator was for ages prevented by the incidence of solar heat. This struggle between steadily-increasing refrigeration and solar heat should therefore be evidenced by the existence of an irregular belt about the (then) equator. Such a belt is found in the circular *maria* Smythii, Crisium, Serenitatis Imbrium, and part of Oceanus Procellarum. If the axis of rotation be shifted about 30°, so that the south pole occurs near Nach or Maginus, all these irregular *maria* form a chain of seas along the equator, which may represent the belt of solar influence referred to. Eventually these *maria* were refrigerated, and the meridional shoal, acting as a fixed tide during libration, caused the change in the direction of the axis of rotation, which shifted the belt of seas from their equatorial position to that at present occupied by them.

DOUBLE-STAR OBSERVATIONS.—In *Astronomische Nachrichten*, Nos. 3047 and 3048, Mr. S. W. Burnham gives the results of his double-star observations made in 1890 with the 36-inch equatorial of the Lick Observatory. The stars which have been re-observed are mainly those which cannot easily be measured on account of their being beyond the reach of any but the most powerful telescopes. Mr. Burnham also notes that his purpose has not been to find as many pairs as possible without reference to their character, but to make several measurements of interesting ones. The present catalogue of new stars contains 70 pairs, of which 39 have distances less than $1''$, with an average distance of $0''\cdot45$.

The following naked-eye stars are included in the list of new binaries:—B.A.C. 230, 48 Cephei (H), 5 Camelopardus, τ Herculis, Ceti 199, 34 Persei, ν Geminorum, 24 Aquarii, 95 Piscium, B.A.C. 1142, 36 Geminorum, ψ^1 Aquarii, χ Persei, Tauri 148, 65 Geminorum; and the following pairs, previously known, have been found to be more closely double:—H 1981, S 409, Σ 809, OΣ (app.) 77, Σ 2476, OΣ 425, Σ 12 (app. II.).

OBSERVATIONS OF THE ZODIACAL COUNTER-GLOW.—An account of observations of the zodiacal counterglow, or *Gegenschein*, made at Mount Hamilton from 1888 to 1891, is contributed to the *Astronomical Journal*, No. 243, by Mr. E. E. Barnard. The changes of form previously noted have been confirmed. In the fall of the year the *Gegenschein* appears large and roundish. It afterwards becomes elongated, and connected with the zodiacal light by a narrow zodiacal band. The observations prove that the *Gegenschein* does not lie in the ecliptic, although very nearly so. Neither is it exactly 180° from the sun. The mean of sixteen observations assign the following longitude and latitude to the phenomenon:—

$$\odot - \lambda = 180^\circ\cdot6\,;\ \beta = +\,1^\circ\cdot3.$$

THE OBSERVATORY OF YALE UNIVERSITY.—The Report for the year 1890–91 of the Observatory of Yale University contains a report from Dr. Elkin, from which we make the following extracts:—

"In observational work with the heliometer I have been engaged almost wholly in the continuation of the series on the parallaxes of the first magnitude stars in the northern hemisphere. The scheme originally laid out has now been completed, and furnishes for each of the ten stars three (for Arcturus five) independent results.

"The triangulation of the comparison stars for Victoria according to the plan drawn up by Dr. Gill has been carried out by Mr. F. L. Chase, who secured some 450 measures of these stars during the months of June to October 1890. Mr. Chase has also reduced the observations as far as it was advisable for us to do so here, and the results have been communicated to Dr. Gill, along with the reduced results of our observations of Victoria and Sappho in 1889. Since February 1891, Mr. Chase has been engaged in a triangulation of the principal stars in *Coma Berenices*, and up to date about one-half of the proposed measures have been obtained.

"It is proposed during the ensuing season to devote the heliometer to a series of measures on the satellites of Jupiter for the determination of their orbits and the mass of the planet, comparing them *inter se*, as has been done with such success by Hermann Struve at Pulkova with those of Saturn."

THE RECENT EPIDEMIC OF INFLUENZA.

THE mortality in London from influenza shows a steady decline week by week; and, although the number of deaths is still in excess of the average, there are good reasons for hoping that the epidemic will shortly disappear from our midst. The severity of the recent visitation, as compared with that which prevailed last year, is clearly shown by the accompanying diagram, in which the effects of the two epidemics are displayed side by side. The weekly mortality from influenza alone is represented by the thick curve, the number of deaths